



# IT Services Task Statement of Work

**Task Title:** Identifying and Assessing New Technologies for Use in the 2010 Census

**Service Category:** R&D2002 Contract

**Task Order Number:**

**Contract Number:**

**COTR Name:**

**Phone:**

**Place of Performance:**

**Period of Performance:** 150 days from the signing of the contract

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## Background and Purpose

The Census Bureau began planning for the 2010 census in 1997. One of the main reasons for doing so is to plan experiments of new techniques and methodologies in time to take place in the Census 2000 environment; this activity of identifying experiments has taken place. Another main reason for early planning, which corresponds to this request for proposal (RFP), is to identify new technologies that need significant lead time for development. Even though this task order projects to the census in 2010, the significant date is 2005. In 2005, the Census Bureau likely will conduct a census test and any new technology must be developed and tested before it is incorporated in to the census methodology. Overall objectives of the 2010 census program in the years FY 2001 to 2005 are to examine and propose alternatives that will:

- ◆ Reduce the cost of the census
- ◆ Improve coverage of the population by reducing the differential undercount
- ◆ Increase mail response rates and reduce respondent burden

- ◆ Improve the Census Bureau's ability to gain accurate responses and locate persons geographically
- ◆ Maintain and refine an open process with all stakeholders throughout the decade
- ◆ Spread the cost of data collection more evenly throughout the decade while reducing risk, simplifying logistics, and improving manageability

One perspective of Census Bureau planning is the basic application of technological innovation to existing administrative or operational processes, which generally leads to tangible/intangible cost-savings, quality improvements, and/or time savings. Examples of such processes are payroll and other field administrative functions, reference file updating/maintenance, data collection, data capture, data processing and data dissemination. There are two assumptions for the 2010 census. The first is that there *will be* a decennial census in 2010 and it likely will use a combination of approaches and techniques to enumerate the population (including at a minimum, mail-out/mail-back and the use of administrative records). The second assumption is that there will be no long form data collection.

The Census 2000 operation information is accessible on the Census Bureau's home page at [www.census.gov](http://www.census.gov), (select "Census 2000" next to the "People" category). This plan provides more detailed background on the necessary components for conducting the census.

### **Expected Outcome:**

The purpose of this RFP is to assess new, emerging, and future technologies potentially having an impact on the Census Bureau's operations, management, and/or organization, in light of the 2010 census program objectives. Thus, (1) the contractor shall identify all current and emerging technologies that likely will be in use by the year 2005 that could significantly improve (in cost, quality, and/or time savings) census processes. The contractor shall indicate the effectiveness of the new technologies by comparing them to what is planned for Census 2000, as outlined in "*The Census 2000 Operational Plan*." (2) the contractor shall identify the technologies that likely will be accepted and used by the public by the year 2005. (3) the contractor shall assess implications new technology has on the form and structure of the short form and evaluation followup questionnaires; and (4) the contractor shall examine the administrative structure and operational objectives of the field organization for Census 2000 and recommend options for modifying the field structure in light of new and emerging technologies.

## **Task Requirement**

The contractor shall itemize the cost estimate for the four objectives (**same as activities**) below. The itemized estimates are needed by the Census Bureau in the event that a given objective is not pursued.

### **Objective One, Technology Innovations**

*The contractor shall identify all current and emerging technologies that likely will be in use by the year 2005 that could significantly improve (in cost, quality, and/or time savings) census processes. The contractor shall indicate the predicted effectiveness of the new technologies by*

*comparing them to what is planned for Census 2000, as outlined in “The Census 2000 Operational Plan.” The contractor also shall provide base unit cost(s) for using the new technology(ies) in “1999 dollars.”* Examples of census processes include payroll, telecommuting, file updating, file matching, data collection, data capture, data processing and data dissemination. Examples of technologies include, but are not limited to: smart cards, all wireless applications, global positioning system, interactive TV, Internet, PCs, telephones, mobile computing devices, kiosks, optical mark/character recognition, and voice recognition. This activity will help the Census Bureau identify which census process(es) will be different in the future as warranted by advances in technology.

For Objective One, research results will be organized on a range of expectations, as opposed to only identifying the best possible case. For example, the Census Bureau seeks the relative effectiveness of new technology, such as, “doing X instead of Y could improve Z by as much as A, or as little as B.” In addition to these summary statements that are specific to the individual technologies, the contractor shall develop an overall comparison between the relative unit cost for producing an edited electronic respondent record via the new technology(ies) **versus** the cost of Census 2000's methods.

As an initial step, the contractor shall develop a comprehensive list of technologies that are envisioned to have an impact on census processes and present them to the Census Bureau in Suitland, Maryland for a “question-and-answer” session. Upon hearing the presentation, the Census Bureau will provide guidance as to which technologies the contractor should explore in-depth. This will be provided in about two weeks from the day of the presentation. The contractor shall assess any number of technologies, as deemed necessary by the Census Bureau, for fulfilling Objective Two.

### **Objective Two, Mainstream Usage of Potential “Data Collection-Related Technologies”**

*Of the “data collection-related” technologies identified in Objective One, the contractor shall identify the technologies that likely will be **accepted and used** by the public by the year 2005.* Based on the history of how technological innovation generally has been introduced and assimilated into society, the contractor shall correlate the introduction and public acceptance of new and emerging technologies. *The contractor shall predict future public acceptance for various population segments (**renters versus owners**, race, Hispanic origin, urban/rural, and geographic region) and characteristics (income and education) and shall indicate the significance of the various factors: affordability, acceptance, and practicality of the technologies.* This activity will help the Census Bureau identify technological applications that have the greatest potential for reaching various population groups. “Data collection-related technologies” refers to any device and/or innovation that would improve/change the *interface* between the respondent and Census Bureau in the collection and transfer of confidential information.

For this objective, research results will be presented in a matrix that shows potential technologies; the degree of public acceptance, affordability, and practicality; and demographic variables indicated in the paragraph directly above.

At the same time when the comprehensive list of technologies are presented to the Census Bureau, as indicated for Objective One, the contractor also shall identify all potential data collection-related technologies. Upon hearing the presentation, the Census Bureau will provide guidance as to which technologies for the contractor to explore in-depth regarding Objective Two on or about two weeks from the day of the presentation. The contractor shall pursue any number of technologies as deemed necessary by the Census Bureau.

### **Objective Three, Technological Implications on the Questionnaire Design**

*The contractor shall identify how new data collection and capture technologies and any other technologies as appropriate (as determined through Objective One) may affect the design of the short form questionnaire, regardless if it is in paper or electronic form.* For instance, the use of OCR/OMR technology to capture data from the Census 2000 forms was a major consideration in the design of the questionnaires.

For Objective Three, research results will be ranked to highlight technologies most likely to affect the questionnaire.

### **Objective Four, Technological Implications on the Field Structure**

*The contractor shall examine the administrative structure and operational objectives of the field organization for Census 2000 and recommend options for modifying the field structure in light of new and emerging technologies.* The Census Bureau uses local census offices (LCOs) to recruit, hire, train, and control a field staff charged with conducting multiple operations including collecting information from non-respondents to the mailed questionnaire. The location, leasing, construction, staffing, equipping (furniture, communications, and computer support), controlling, and closing of hundreds of temporary offices is one of the Census Bureau's most complex and costly operations. For Census 2000 there will be 520 LCOs. The Census Bureau is looking for ideas on how the field structure could be changed given new and emerging technologies. For example, will technology of the future enable a reduced field structure that is less labor intensive and more cost efficient? How can satellite technology be used? Will wireless digital data transmissions from hand-held devices support the conveyance of questionnaire data from a remote site to a central data collection computer? Can smart cards be used for administrative functions, i.e. security-background check, payroll and job-reporting? The contractor shall provide and explore other ideas as well. In general, what different combinations of new and emerging technologies might have the greatest effect on the Census Bureau's current field organization?

For the proposed "technology scenarios," the contractor shall provide estimated unit cost for development of technology for applications, testing cost, purchasing, training, and support/maintenance of deploying the technology in the field in "1999 dollars."

For this objective, research results will be organized on a range of expectations, as opposed to only identifying the best possible case. For example, the Census Bureau seeks the relative effectiveness of new technology, such as, "doing X instead of Y could improve Z by as much as A, or as little as B."

## Deliverables

The contractor shall develop a work plan and schedule for completing the activities. This initial work plan and schedule includes all four activities but shall focus on Activity One.

Upon completing Objective One (on or about the 60 day), the contractor shall provide the Census Bureau an interim report (25 copies) on their results, recommendations on further defining the scope of research for Objectives Two, Three and Four, and a detailed work plan and schedule for accomplishing them.

On or about 120 days from the award day, the contractor shall produce a draft report that ties together results from the interim report with findings from objectives Two, Three, and Four and will provide 50 copies to the Census Bureau. The report will, in the least, contain the following:

1. An executive summary specifying the major findings and recommendations of the research.
2. Documentation of methodology in achieving each activity.
3. A detailed report of findings for each activity and recommendations.
4. Models, charts, and graphs to illustrate recommendations stemming from the research.

The contractor shall produce a final report, which accounts for the Census Bureau's comments on the draft on or about 150 days from date of award. The contractor will provide 100 copies of the final report to the Census Bureau.

The contractor shall give presentations (at least two) for Census Bureau staff regarding the findings and recommendations from the research. As part of the presentation, the contractor shall provide summary information for handing out and copies of slides--if used-- or other materials used. Because the Census Bureau may want additional presentations for specific audiences, the contractor shall provide a "per presentation" cost estimate.

## Milestone Schedule

The contractor shall document the findings in a report and make a formal presentation on the results to Census Bureau staff in Suitland, Maryland. All due dates are from the award date.

DELIVERABLE TITLE	DUE DATE	QUANTITY
Work Plan & Schedule	7 days	20
Interim Report (Activity One)	60 days	25
Draft Report	120 days	50
Final Report	150 days	100
Presentations at Census Bureau	To be arranged.	2

## **Government-Furnished Equipment or Data**

The government furnished materials below will be provided at task award.

- ◆ Results from an internal brainstorming workshop, which formed recommendations for future research.
- ◆ Technology-related budget components developed by the 2010 planning staff for FYs 2000 to 2005.

## **Travel Requirement**

Travel to Suitland, Maryland is required of the contractor. There is no government travel.

## **Skill or Relevant Experience Requirement**

Past experience in assessing future technology capability is required. The contractor must have a full awareness and understanding of the information technology industry and what the future holds. The contractor shall have experience working with experts outside of their organization, as necessary. Such experts include the field of Information Technology, academic and community leaders having knowledge of all population segments, futurists, and national associations.

## **Task Performance Evaluation Criteria (Performance Measures)**

- ◆ The contractor's adherence to the schedule and budget
- ◆ Comprehensiveness of fulfilling each objective
- ◆ Clarity of reports and presentations